

ABSTRACT OF THE DISCLOSURE

A near-field optical flying head includes a carrier maintained in a near-field distance from the surface of a disk to be recorded, a SIL (solid immersion lens) mounted on the front side of the carrier, a focusing lens mounted inside the carrier and adapted to focus laser beam onto the SIL, the SIL having a refraction face plated with a light scattering layer and a dielectric layer on the light scattering layer for releasing silver atoms to produce an optical aperture for the passing of laser beam upon the radiation of laser beam. In an alternate form of the invention, the refraction face of the SIL is plated with a mask layer and a dielectric layer that changes the refraction index to produce an optical aperture in the focused point for the passing of electromagnetic wave when heated by heat energy of laser beam.